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CHERRIES FOR THE WEST, AND FOR PROFIT.

BY F. R. ELLIOTT.

THROUGHOUT most sections of our Western and Southwestern States the cultivation of sweet cherries, like Black Tartarian, Rockport, Elton, etc., is attended with so many vicissitudes and so much uncertainty and disappointment as to prevent their being generally grown, and in their place (because every one wants cherries) the common varieties of sour cherries, with here and there a plantation of Early Richmond or Early May, have taken their place, and many a grower of fruits, with hundreds of cherry-trees, is at this time utterly ignorant of the good qualities of the sweet cherries, and also in a great measure of the best varieties of the sour cherries, or those regarded as hardy.

Illinois and other Western horticultural societies have asserted that the cherry known by them as "*Early May*" is the only one worthy of general cultivation at the West. I think otherwise, and look upon such decisions as being immature, and as measurably without a fair trial of other sorts. While I have great deference for the views and opinions of others, I present the following varieties, which I feel satisfied may, as a rule, be safely planted and successfully grown, even in localities regarded as most unfavorable.

I have, many times before, written of the advantages of using the Morello cherry as a stock, and also causing the trees to branch directly from the ground; both of which are now generally conceded to be valuable aids to success; but if Mazzard stocks are used, I think root-pruning annually until the trees arrive at bearing age, will, in many locations, and especially when the soil is dry or well underdrained, result in producing healthy and hardy trees; but as it is attended with more labor than when the tree is on the Morello stock, and does not even then dwarf the tree quite as much, the Morello stock is best, if it can be had.

LOUIS PHILIPPE.—Of all the sour cherries, were I restricted to one, this would be my choice. The tree is upright, spreading, growing to a large tree as it acquires age, open and regular in form; of habit between the Dukes and the Morellos, although its tendency is toward the Morellos—vigorous and rapid in growth. *Leaf*, broad, oval in shape, with fine sharp serratures, petioles green, and of medium length;

fruit, the largest of its class, roundish, round and regular, very even and uniform; *stem*, short, stout, set in a broad, even, regular cavity, usually grows in clusters of two or three; *color*, rich, dark, almost purplish, black red when fully ripe; *flesh*, red, tender, juicy, sprightly, lively, mild acid; *pit*, small. My drawing is made from fruit gathered 15th July, 1867, and it would remain on the tree perfect ten days

FIG. 156.—*Louis Philippe.*

or more without injury, or rather with benefit. On one stem six inches long, now before me, there are twenty-three cherries, all of a size equal to the drawing.

REINE HORTENSE.—This is a Duke in habit, more upright and vigorous, and with larger and stronger foliage than the Morellos. As a bearer it is not more than moderately productive; but while it bears regularly and evenly, all the fruit of good

size, the tree is quite hardy, and the fruit ripening late carries the season of cherries along almost or quite to August, as it will hang a week or more after being really ripe. *Leaf*, large, long, oval, with a sharp point, serrated; petiole, reddish; *fruit*, large, round, elongated; sides, compressed; smooth, glossy, regular surface; *suture*, shallow, half round, followed by a marked line; *color*, bright, lively red, marbled and

FIG. 157.—*Reine Hortense.*

mottled on amber ground; red when grown in the sun; *flesh*, pinkish yellow, sprightly, mild, pleasant acid; *pit*, full medium; perhaps may be classed large; *stem*, long, often, if not always, curved. *Season*, from middle of July to August.

BELLE MAGNIFIQUE.—Another fruit with so much of the Duke habit that it perhaps

must there be classed. While young, the tree is a very moderate bearer, but as it acquires age, the productiveness is increased, until on a tree ten or twelve years old, cherries sufficient for a family can be gathered daily for many weeks. *Leaf* is broad, rounded oval, with fine sharp serratures; *fruit*, large, or above medium, ovate rounded; *color*, clear red or pale yellow, when exposed to the sun—if left to hang on the tree for a time they become all red; *flesh*, yellowish red, tender, mild acid, separating freely from the pit; *stem*, rather long and stout, set in a deep, open cavity. *Season*, all along from last of June until early September.

KIRTLAND'S MORELLO.—This variety was first described as "Kirtland's Large Morello;" afterward, in my book, as "Large

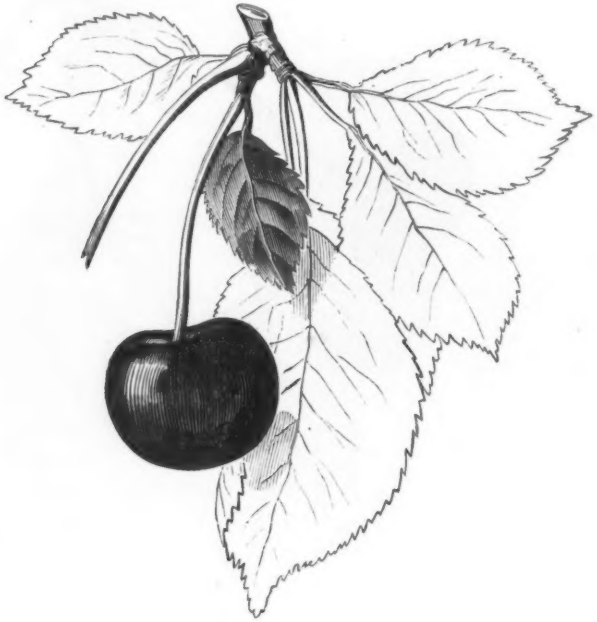

FIG. 158.—*Belle Magnifique.*

Morello." I now prefer to name it "Kirtland's Morello," because it is not of the largest of its class, although a large and fine cherry, and because I honor the name of Prof. J. P. Kirtland, who originated it, and believe that the variety will be a more profitable one for our Western fruit-growers than any of his choice and delicate sweet varieties. The tree is a vigorous, rapid grower, spreading, and perhaps, like all of the Morellos, a little drooping; yet it is upright, and forms a very handsome tree. It is not a great bearer, but its fruit is evenly distributed over the whole tree, and is of uniform size, large, and very handsome and good. The leaf is of the Morello class, while the wood appears stronger. *Fruit*, large, for Morellos, round-

ish, dark red; *flesh*, juicy, acid, and, unless ripe, a little bitter, but when ripe, rich and of high flavor; *pit*, small. It ripens early in July, and is really a most valuable sort.

ARCHDUKE.—This is a Duke comparatively little known or cultivated, yet in my experience it is by far the best of them. It is very erect and upright in habit of growth, more vigorous than May Duke or Late Duke, and quite as hardy, if not more so. *Leaf*, long, broad oval, dark rich green, slightly serrated; petioles, a little bronzed; *fruit*, large, not as round as May Duke — more heart-shape — compressed; *color*, very dark, shining red; *flesh*, light red, slightly adhering to the pit, tender, sub-acid, rich, and very good; *stem*, long

FIG. 159.—*Kirtland's Morello.*

and slender; an abundant bearer, ripening about the 1st and 8th of July. Next to Louis Philippe, I regard this as one of the varieties most valuable to plant at the West or Southwest, either for market or family use.

EARLY RICHMOND.—Under this name I have an old European sort which it seems difficult to identify. In Illinois and other Western sections, some of our best pomologists regard the Early May there grown as identical with the description by myself of Early Richmond, while I am myself in doubt whether the Early May of the West is not the same as one imported by me some years since under name of Donna Maria. I regret that I can not give a drawing of Donna Maria from the fruit, as then

it, perhaps, might help to settle the matter. As it is, I can only give a description taken from my book, while I give a drawing of Early Richmond, and description from the fruit before me. The tree is a free grower, spreading and drooping in habit. Spray abundant. *Leaf*, a dark, rich, shining green, broad oval, acute pointed at apex;

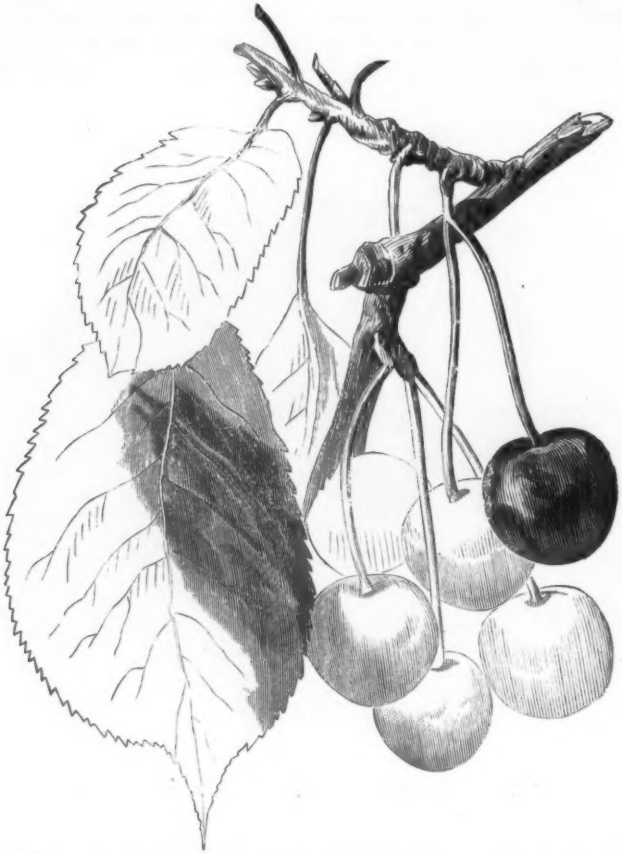

Fig. 160.—*Archduke.*

serratures regular—nearly every other one is deepest; petioles, medium length, green; *fruit*, of medium size, borne in pairs, round, bright, rich, clear red, becoming darker as it hangs on the tree. Although it is fit to gather in June, it will often hang on until the middle of July. The stone adheres strongly to the stem, so that the fruit may be easily stripped therefrom, and the corolla almost always remains on the stem,

thus marking it. The flesh is of a reddish cast, very juicy and tender, and to many persons' taste a pleasant acid. The stem is set in a deep round basin, very regular.

DONNA MARIA—"A Morello, forming a small tree, but very prolific. Fruit of medium size, dark red, tender, juicy, rich, acid, valuable for cooking." My tree of this

FIG. 161.—*Early Richmond.*

was injured, and the fruit this year quite imperfect, so much so that I do not feel like making drawing or new description from it. I hope at the Pomological Meeting to be held in St. Louis this September, that the Cherry subject will come up, and receive more attention than it has at the past two meetings.

PROPAGATING PLANTS BY SUCKERS AND DIVISION OF THE ROOTS.

(CONTINUED FROM THE SEPTEMBER NUMBER.)

BY A. S. FULLER.

THE variableness in the structure and form of roots demands a corresponding variation in the mode of propagation. Some kinds are hard and woody, and such as these often require a particular treatment to cause the development of buds and new

FIG. 162.—*Oxalis Acetosella.*

roots, while others will produce them in abundance under the most ordinary care. Among herbaceous plants there are an immense number of species which are readily multiplied by root divisions.

The pæonia and dahlia are types of a

class of plants that produce tubers with the buds clustered at the apex or crown, and not distributed over the entire surface, as seen in the common potato and artichoke. In multiplying the plants of either class we have only to separate the buds, leaving a tuber, or a small portion of one, attached to the bud, for the purpose of furnishing it with sustenance until it shall emit new roots and tubers. Many of the fibrous-rooted plants, which grow in tufts or stools, as seen in some species of grass, garden pinks, and other familiar plants, are commonly propagated by division of the roots. All plants which naturally produce buds, bulbs, or tubers on their roots

FIG. 163.

or subterranean branches, are, as a rule, more readily propagated by root divisions than those which do not show such a development. But, as I have previously stated, with many species the existence of buds is of no importance whatever, because there is an inherent power in the plant sufficient to produce them whenever they are required.

It is, however, only by experiment that we can determine what kinds of plants possess the power of producing adventitious buds; consequently it is always best to preserve all the buds that may be observed upon roots that are being used for propagation. For instance, in dividing the large root-stocks of the yucca, boccoonia, canna, and arundo, the buds are situated at what are called the joints, consequently the roots should be cut through the internode, so that the buds will not be injured.

The oxalis acetosella has interspersed along its root-stock a number of small bulbs, as shown in fig. 162; at the base of each there is a small bundle of fibrous roots through which the plant mainly draws its sustenance. With such an example before him, the merest novice could readily determine how many divisions to make; but if no such bulbs nor buds were apparent, as is usually the case with the roots of the paper mulberry, paulownia, and similar trees, then he would have no guide, but must determine how large or small the pieces should be to produce the best results by experimenting with the different sizes.

We are now supposing that those propagators who have discovered the best methods of propagating the different species of plants had kept the method to themselves, which, fortunately for the present and future generations, is not the case, to any considerable extent.

Although it may be quite a difficult matter in some cases to decide what particular portion of a plant is *the true root*, and perform their functions only, *i. e.*, gather sustenance for the support of the plant, still there are many instances where the point of separation is distinctly marked, and no change of position ever takes place. In many of the bulbs the point of junction between the true roots and the bulb is very distinct, although in common practice we often speak of dividing the roots, which in reality is only a division of leaves, or a fleshy deposit made by them at their ease, as in the common garden lily. The Tigridia is a familiar example of a bulb which rapidly multiplies by divisions. Fig. 163 shows a cluster of these bulbs which has been produced from one in a single season. The true roots are large and fleshy, and contain nutriment which is

absorbed by the bulb, even after they have been separated from the soil. The roots of plants are mainly buried in the soil, consequently their peculiarities, habits, and structure are studied far less than the stems, branches, leaves, and flowers, which are continually in view. But they possess many beauties, which when once seen will never be forgotten; and their wonderful structure, along with the important place they occupy in the vegetable kingdom, demands our best efforts to discover all the secrets of their growth and development, much of which is at present unknown.

CROTCHER APPLE.

We have received specimens of this apple from S. E. Thompson, Esq., Vienna, Dorchester County, Md. It is said to have originated in that county, but it is not known by whom. We do not recognize the fruit as any variety heretofore noticed. Fruit, medium size, oblate conic, flattened at base and crown, slightly angular; skin whitish, somewhat waxen, sometimes with a slight blush, and thinly sprinkled with

Fig. 164.

light and green dots; stalk short, set in a large, deep cavity, slightly russeted; calyx closed; segments medium length, erect or slightly recurved; basin rather large, abrupt, slightly uneven; flesh whitish, crisp, tender, juicy, with a refreshing subacid flavor; quality very good; ripe 1st to 10th of August, or ten or twelve days after early harvest.

New Petunias.—Among the new petunias this season, one under the name of *Edward Beach*, shown by Messrs. Frost & Co., of Rochester, at the June meeting of the Western New York Horticultural Society, is perhaps one of the best.

GROWING AND FRUITING DWARF PEARS.

BY F. R. ELLIOTT.

THE planting and growing of Dwarf Pears yearly increases, but comparatively slow in accordance with what would be supposed from the acknowledged fact of their correct cultivation being profitable in a pecuniary view. Treatise after treatise has been written, and the whole subject perhaps as fully delineated as is possible, and yet there are hundreds of men who yearly plant Dwarf Pear Trees, but follow no system of cultivation except the plain one of "let alone," and the result is, that of the number of trees yearly planted, nine tenths of them grow for two, three, or four years, become ill-shaped, bear a heavy crop of fruit, gratifying the owner, and causing him to break out in fulsome praises, but the next year are found merely alive, and in two years more gone entirely. Such showing, however unfavorable it may appear, is, according to my observation, very near the truth, and while, as I have said, abundance has been written, which should have been heeded, yet as line upon line is always needed in Horticulture as well as

FIG. 166.

FIG. 165.

Holy Writ, I will assume to give a few plain directions, that, according to my observation, must be pursued in order to grow Dwarf Pear Trees and fruit them, looking forward to their long and profitable life. And first, while Dwarf Pear Trees, that is, the pear worked upon quince roots, may be grown and fruited successfully in almost any soil, as with the grape, I believe a rather heavy, strong clayey loam is the most enduring and productive of the highest-flavored fruit. We must also understand that, unlike the Standard or pear root, the dwarf, being on quince, will not do to grow in grass plots, no matter how much you dig and mulch around them; in fact, digging immediately around the body and under the branches of the tree is injurious rather than beneficial. It is true that Dwarf Pears, as well as grapes, are grown occasionally in grass

lands, without care or attention, producing good crops of fruit; but the case is rather exceptional, than as a rule to be followed. Make, therefore, the plantation where with horse plow and cultivator the ground can be stirred between the trees, while keeping the weeds and grass from growing directly around them by means of the hoe; or, if convenient, keep the ground light and loose by mulching, that is, covering the whole of the ground over four inches deep with straw, coarse hay, or any similar material. Experience, I think, however, favors working the ground and leaving it exposed for the first three or four years after planting, or until the trees commence bearing freely.

In preparing the ground, after first thoroughly plowing mark out the rows eight feet apart, and plow two furrows each way, leaving the center of the line where we design to plant with a land furrow and

Fig. 167.

two furrows of loose soil each side thrown from it. This plowing should be from seven to nine inches deep, and then plant the trees, carefully spreading out the fibrous roots, along the line, each eight feet apart, and just so deep that when the furrow is turned back, all the stock or quince on which the pear is budded will be below the ground. After the trees are set, turn back the furrows with a plow, and then add a subsoil plow to follow the first or common plow, and finish plowing the ground between the rows, turning it all the time toward the trees and leaving a dead furrow in the center for surface drainage.

And now, with the trees planted, comes the "tug of war" in the way of pruning; and while the drawings published give us pictures of trees at just certain lines, I

know the majority of growers can not, nor will not, give the care requisite, even provided they had the knowledge to enable them to insert a bud here or a side graft there, in order to form a symmetrical tree. I therefore choose to take things as they are, and try to say how a certain good form and healthfulness to the tree may be obtained by even the most uninformed. Again, our drawings published, as a rule, together with the instructions, direct the commencement of labors from a maiden, or one year from the bud, tree; while very few trees are sold by our nur-

Fig. 168.

serymen at less than two years from the bud, and these generally without ever having had a knife applied to them with the intention of forming them into beautiful or appropriate shaped trees, but designedly to enable them to make vigorous and salable ones.

My readers will recollect that I do not here write for the teaching of professional gardeners, and those who have time and

knowledge to care for and create perfect formed trees in every case, no matter what the variety, or how incongruously it may grow, but for the plain, practical working of those who desire to grow Dwarf Pears with little labor, and continue them in health and vigorous fruitfulness from year to year.

Assuming that the trees are received and planted, I will next assume that they are mainly of two years' growth from the bud and about four feet high, with side branches, and the growth of the last year varying from one to three feet. Some of them, perhaps, have no side branches until up some two and a half to three feet from the ground, and such trees I cut at once down to a good strong dormant bud about eighteen inches from the ground; but as a majority have side branches, my drawing,

Fig. 169.

fig. 165, shows that I cut down to two buds on a side branch and three buds on the leader, leaving, if possible, my buds on the outside of the shoot in order that, as they grow, the tree will form an open head. This drawing and all the others I give are from trees in my own grounds, and exact copies. The first summer I permit all the buds and shoots to grow as they may, not but what it is probable, if time could be given to watch and rub away buds, as a careful gardener would, that the sap might be directed to furnish greater strength to particular shoots; but that as the average of tree-growers can not, or will not, give time and care requisite

for such course or purpose, it is desirable to gain all the supply of root possible; and as summer pruning checks rather than adds to the formation of roots, I prefer to let all grow the first season. What is termed winter pruning is generally advised to be performed in the spring. I prefer the fall, say about the last of November, and I then take this tree, and prune its growth of the season to the cross

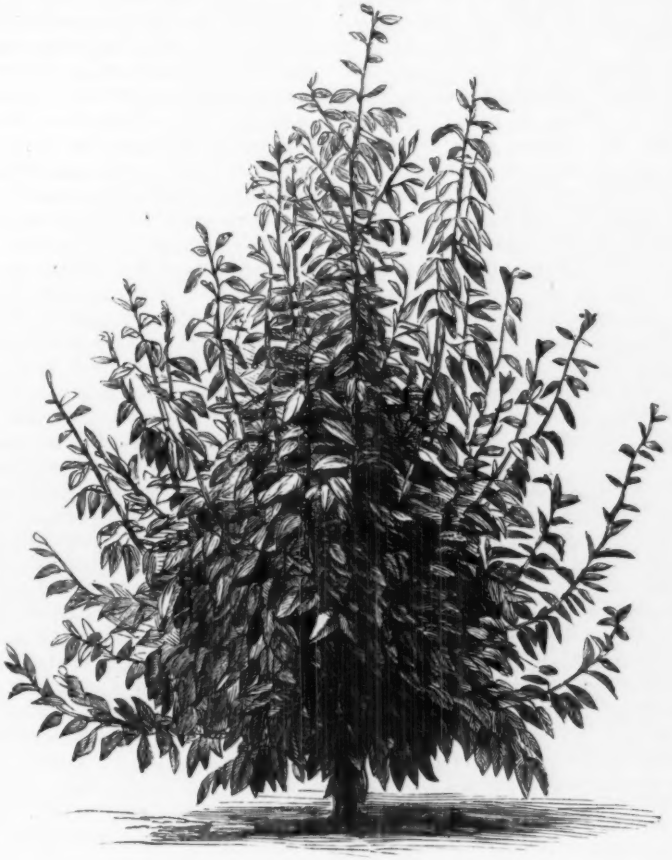

Fig. 170.

lines marked on the branches in fig. 166. Fig. 167 shows this same tree with about one half its season's growth made, and the extension beyond my cross lines being yet tender with the foliage not quite half grown, the thumb and finger nail met together cut it readily; and while for a few days the extension of growth is checked, no great check is given to the roots, but within four or five days after

pinching, the tree pushes its terminal buds, or the last one against where we pinched; and while it makes a moderate growth spreading and expanding the form of the tree, the little check given by this pinching adds apparent increase to the fullness of the lower buds, and hence hastens the period of its first fruiting. This summer pinching is an easy labor, usually to be performed about the middle of June—sometimes earlier, according to seasons, and in doing it, perhaps more skill, or rather thought and common sense, is required than even for the winter pruning. I saw a grower this year imbued with the pinching-in process, but he had done it without a thought of guiding the form of the tree by means of the growth of the next terminal shoot from the last remaining bud, and as a consequence his trees are thick, bushy, round-headed, perhaps, but without that openness required to develop the best fruit; and in order to reach it he will have to cut away a large number of branches, and really put his trees back a year rather than advance them. Fig. 168 shows the same tree, or one close by it, which is an exact counterpart (the whole pruning having been alike), which has not been summer pruned, but left to grow as it would from the condition in which fig. 166 shows it to have been cut at the cross lines last fall. The cross lines on this tree indicate the point at which to cut this fall.

The next and following years, whatever course of pruning, whether fall or annual pruning, *i. e.*, winter pruning or summer pinching be pursued, the lower branches of the tree will sway downward somewhat, and if continued to be pinched or pruned annually the appearance will be, at the expiration of two more summers or the fourth year from planting, as shown in fig. 169. The third summer's growth, however, sometimes proves so very vigorous, that I have occasionally found a gain by leaving the tree without any annual pruning that year. It having obtained a good bushy form, if I cut away too freely I get again a vigorous growth without any gain in shape, but keep back the formation of fruit buds, which the tree is now old enough to produce and sustain its fruit. If left unpruned, the elongation of growth is checked, and all along the stems of last year fruit buds commence to form. Fig. 170 shows a tree left unpruned, on which last year the shoots grew three to five feet; this year they have grown about one foot, or fourteen to sixteen inches, and the shoots of last year have fruit buds promising a good crop next season.

From this time onward, or rather from the time that once the tree has acquired its appropriate regular spreading form and commences bearing fruit, very little is requisite in the way of pruning from year to year to enable it to continue along. Good cultivation, as I have said, and not too near the bodies, with an annual shortening of the previous year's growth to one half or one third, according as it is vigorous or otherwise, and a yearly thinning out of its fruit should it incline to set too many, is all that is needed to make pear growing on Dwarf Trees successful and profitable.

Raspberries should have all been pruned some time since, but if not done, better do it now than wait until spring. Take away all the old canes that have borne fruit, and also all the small, weakly canes, leaving two to four canes to each hill, and these cut back to from three to four feet high, according to the strength of the canes. Leave all the canes loose, to be acted upon by winds. If tied to wires or stakes, our experience has been that the wear of winter cuts and injures the canes at the tie, causing them often, in the following spring, to break off at that point.

ROOTS.

I HAVE read with much interest the articles by Mr. Fuller on the propagation of plants; but I must confess that on reading the one on the propagation of plants by divisions of the roots, I was not a little surprised at the criticisms which he offers on the works of Gray, Lindley, and Schleiden. That these authors should have fallen into any very gross errors in regard to the morphology of plants was something surprising to me.

Schleiden is well known to be one of the most careful of original observers, a man who has worked ably and industriously upon the structure of plants. Gray is a botanist of the first rank, and is well known in other departments of that science besides taxonomy, while Lindley was unquestionably at the head of the scientific horticulturists of Great Britain. That all these men should be in error on the point in question does indeed seem strange.

After carefully reading Mr. Fuller's article and the references he has given to the works of these distinguished men, I have no hesitation in saying that he has not presented a fair statement of their views and of the morphological principles which they advance. They take a purely scientific view of the subject. For such purposes definitions must be close and exact, and their definitions are such as exclude from the catalogue of roots a great many things which find a place there in the minds of common readers. Thus, we all know that when farmers speak of *root* crops, they include potatoes. Neither Gray, Schleiden, nor Lindley admit potatoes among roots. Schleiden carries this so far as to deny entirely to some plants the possession of true roots, as Mr. Fuller will see if he reads on five lines beyond the passage which he quoted from that author.

If he will consult De Candolle's "Organographie Vegetale," he will find that at one time it was proposed by Hedwig to call all underground parts roots. Probably Mr. Fuller has adopted Hedwig's definition.

But it was seen at once that this would not answer. It would be tedious to give the reasons. They are fully set forth by De Candolle.

Then again, in regard to Dr. Gray: At page 102 of the work quoted by Mr. Fuller, he says: "To the general statement that roots give birth to no other organs, there is this abnormal, but by no means unusual exception, that of producing buds, and therefore of sending up leafy branches. Although not naturally furnished with buds like the stem, yet, under certain circumstances, the roots of many trees and shrubs, and of some herbs, have the power of producing them abundantly. Thus, when the trunk of a young apple-tree or poplar is cut off near the ground, while the roots are vigorous and full of elaborated sap, those which spread just beneath the surface produce buds and give rise to young shoots. The roots of the Maclura or Osage Orange habitually give rise to such irregular or adventitious buds and branches."

With all due deference to Mr. Fuller, I think Dr. Gray's exposé of the facts in the case quite as full and quite as clear as that given in the September number of the HORTICULTURIST.

Dr. Lindley is quoted as saying that cuttings should be made only from those parts of the plants which have buds upon the surface. To this Mr. Fuller objects, that we never *look* for buds—just as if our *looking* for them made any difference. Moreover, buds may exist, and yet not be very obvious to uneducated eyes. Mr. Fuller well knows that if he were to offer for sale a quantity of grapevine cuttings which did not contain very visible buds, he would make but slow sales. Here we have a plant

on which in those parts usually employed for propagation the buds are very prominent. On the other hand, every botanist knows that the willow is nearly covered with adventitious buds, which can be very readily seen if looked for properly.

But Mr. Fuller says that the doctrine laid down by Dr. Lindley would lead us to ignore the use of *leaves* for propagation. Now, it so happens that at page 271* of Dr. Lindley's work, he commences a whole chapter devoted to the propagation of plants from *mere* leaves! Moreover, he refers to the old work of Agricola (edited by Bradley, London, 1721), to show that the process is an old one. Agricola's work is a very curious production, and gives very full details in regard to the propagation of plants by leaf. Of all the old authors that we have read, he came nearest to a description of the modern system of propagating grapevines by eyes.

In regard to propagation by leaves, Dr. Lindley says: "The mere leaves of some plants will grow under special circumstances—a fact often supposed to be much more rare than it really is."

Moreover, in regard to propagation from roots, Dr. Lindley gives nearly two pages of fine type describing the methods of propagating plants from pieces of roots. (Op. cit., pp. 282–4.)

But Dr. Lindley holds with Schleiden, that roots have no buds. "In general, roots have no buds, and are therefore incapable of multiplying the plant to which they belong. But it constantly happens, in some species, that they have the power of forming what are called adventitious buds; and in such cases they may be employed for purposes of propagation. There is no rule by which the power of a plant to generate such buds by its roots can be judged of. Experiment is therefore necessary, in all cases, to determine the point." He then gives an instance (Anemone japonica), in which he says: "Every fragment of the plant is reproductive." (Op. cit., page 31.)

He also describes a process very similar to that figured by Mr. Fuller, but in regard to it he says: "They [the roots] are now in every respect similar to branches, developing buds, and consequently all the appendages of the axis. They appear anatomically the same as branches, excepting the pith, of which they are destitute. Now, it appears that roots when so circumstanced perform all the functions of the stem, confirming Knight's theory, that sap can at any time generate buds, without any previously-formed rudiment, when circumstances are favorable to their production."

These extracts from their works show very clearly, we think, that Lindley, Gray, and Schleiden are quite as fully posted in regard to the facts in the case as is Mr. Fuller. Is it to be supposed, then, that such men would stultify themselves by denying in one breath what they were about to assert in the next? Such a supposition is too grossly absurd for me to believe. The difficulty is, that Mr. Fuller has merely glanced at the works of the authors he has undertaken to criticise, and has failed to inform himself fully as to their views. When he does this, I think the "mystifying statements" of which he complains will become plain. BIBLIOPHILE.

ASPARAGUS beds may be made this month just as successfully as in the spring. Prepare the ground by digging or plowing it deep—not less than sixteen inches—securing some drainage from the beds into the alleys, and thence freely away. Cut off the tops of the plants, plant about three inches deep, and dress the whole bed over with coarse manure four inches deep.

* "Theory of Horticulture," London, 1855. The American edition, by Downing, contains the same chapter.

PURE NATIVE WINES—WHAT AND WHERE THEY ARE.

Under this head, our readers will remember an article in our June number. It was written with the best of feeling toward all wine-makers, and as a guide to those who intend planting the vine with a view of making wine from the produce; believing as we do, that while the quantity of fruit consumed by the people will increase from year to year, still there are some sections of our country where it will be found more profitable to make wine than to sell the fruit for table use. As there are now perhaps more who make wine by their skill in compounding, than in a knowledge of fermenting the juice and fining it, it was not to be expected that our remarks would go "scot free," for wherever a man's pecuniary interest lies, there generally is he sensitive, and accordingly we have had several communications; but as none of them embraced more than a puff of themselves, we have not published them.

In the last September number of the Boston *Journal of Horticulture*, our old friend and former correspondent George Husmann takes us up quite savagely, evidently showing his sensitiveness on a subject which he well knows has caused him to receive a certain amount of censure as taking a first, however modest or innocent, step in the way of diluting and preparing a good drink, which he calls wine, and which can be made in any season, and with almost any grape. Certainly, if correct, a very great gain on the old idea, that it required good ripe sweet grapes to make good wine. Our main objection to his course, which is an imperfect knowledge of gallizing, is that it opens the door to other practices which may not in themselves be as little reprehensible. He cites us as having made accusations without investigation. We have looked over our article, and fail to find where we have made accusation against any one. We only spoke of our native wines as they had come to our knowledge, giving names only of a few parties whose wines we had drank, and believe to be pure. But if a man is found with his coat off, and a chill blast comes, he is sure to feel it, and at once turns savagely toward the point from whence it comes; and even if he knows he can effect nothing, it is natural that he should exhibit his feeling.

Mr. Husmann quotes Mr. Leick as assenting to the practice of adding sugar and water. We do not know how Mr. Leick will accept this, but incline to the impression that he would not acknowledge any such courses as embraced in his practice of wine-making. As we have studied Mr. Leick, his knowledge in wine-making as compared with Mr. Husmann's would enable the latter to take home to himself his German proverb, of having "heard the bell ring without knowing where it hangs."

MARKETING GRAPES.

The grape may be shipped to distant markets with less liability to damage than any other of the small fruits. There are, however, some exceptions to this statement. Some varieties are quite tender and more difficult to handle than others. The Concord is one of this sort; its clusters are large and compact, its skin thin and tender, and its berries large and juicy, thus making it, perhaps, the most difficult of all our native grapes to handle, or to market in good condition. It can, however, be shipped, and some grape-growers do succeed in sending it long distances, without

material damage. This being one of the most popular market grapes among the fruit-growers, as well as with dealers in general, it is important that the art of marketing it should be generally understood.

This grape, when rightly handled and presented in market, makes the most attractive appearance of any of the small fruits; therefore great care should be taken in gathering and packing to preserve the bloom that covers it. The best way that we have tried, is to lay the bunches, when cut, into shallow market-baskets, two layers deep, and carry them to the fruit-room, where they should be allowed to stand a couple of days to evaporate some of their moisture and become a little wilted, thus rendering the clusters more flexible and easier to pack. In taking the bunches from the basket, they should be handled chiefly by the stem. With a little patience, a skillful hand will seldom find it necessary to handle a cluster in any other way. The grapes should be cut when dry, but not before they are sufficiently ripe. It is a lamentable practice, that of sending half-ripened fruit to market, as is too often the case, especially with the grape. This fruit when ripe is justly esteemed as one of the healthiest known; but when eaten in an unripe state, it may be set down as decidedly unwholesome.

Grapes, like other small fruits, are usually packed and sent to market in boxes of various styles. The best packages, however, for distant markets, are those holding not less than two, or more than five pounds. Smaller boxes are sometimes used, holding but a single pound. This size we consider unprofitable to both parties, especially so to the buyer, as it compels him to pay about as much for a package holding but one pound, as for one holding two or more, and nearly half as much as the grapes are worth. A medium-sized box is undoubtedly the best for such varieties as the Concord, as they are liable, when placed in larger packages, to be crushed by their own weight. Grape boxes are generally made of paper, which answers the purpose very well. Still we have met with losses by their use, for if the paper absorbs much moisture from the grapes it loses its stiffness, and thus the grapes crush each other by their own weight. To avoid this liability, we would recommend the use of wooden boxes; these can be made as cheap, and perhaps cheaper than paper ones, and by covering the outside with suitable paper, can be made to look just as presentable. We like round boxes best, as they can be made of lighter material, and be stronger in proportion than square ones, and are more attractive in appearance. The depth of a grape box should be about four inches. The depth, however, may be varied according to the varieties or size of the bunches.

Grapes may be shipped in either light boxes, cases, or crates. They should be as light and cheap as they can be, and have sufficient strength and durability for a single trip to market, as it is not expected that they will be returned when sent long distances. In constructing the cases, care should be had not to get them too large and heavy. A fifty-pound crate is as much as a man will take up and handle with ease; and if it is tumbled about, the jar will not be as violent as in the case of heavier packages.—*The Circular.*

Lawns will receive a great benefit from a dressing of bone-dust this month. Apply, say, at the rate of one ton to the acre, and at the same time sow at the rate of two bushels of plaster to the acre. Such an application will show the grass vigorous and healthy next spring, and do away with the too common but unsightly practice of covering during winter with manure. Do not mow the lawn any after the middle of this month, but leave the growth as a partial protection to the roots.

EDITOR'S TABLE.

To Contributors and Others.—Address all Communications, for the Editorial and Publishing Departments, to F. W. Woodward, 37 Park Row, New York.

Cheap Plants.—We have all along contended that it was better and really cheaper for the purchaser to pay double price for the best plants than to take those rated as *cheap*, as a gift. The following experience of a grower, we feel, is only a truthful summing up of the case, although we do not believe the price named—viz., one dollar a plant—a just one to be demanded for even the best of grapevines, except it be some rare and new sort that the demand requires more than the supply can furnish:

"It is better for the purchaser to pay one dollar each for three vines propagated from a parent vine, than to pay twenty-five cents each for a dozen vines propagated from a vine in every respect equal to the vine producing but three. He will have three plants of excellent quality; and if he will give the same care to the three vines that he would to the dozen, he will in the end, according to my experience, have better results; but the great mass of the people demand cheap plants, and we must gratify them, or they will send to those who will furnish them; but if all would agree to send out none but plants of the best quality, and charge according to the value of the plant, I believe in the end it would be to the interest of both purchaser and propagator. When I see an advertisement in which grapes are offered for five, eight, or ten cents, even at wholesale, the idea strikes my mind that the plants are not worth anything. When I first commenced to test the vines I bought cheap vines, but I found in a few years that I was throwing away money. The people ought to understand that a good vine at fifty cents or a dollar is far cheaper than a poor vine at twenty-five cents, or even five cents. I bought some of the Wilson Blackberry plants this spring, at a dollar and fifty cents per root; they have grown three feet, and look healthy. I afterward saw an advertisement offering the same variety of plants at twenty-five cents each. I procured some of the latter to see what the difference in their growth would be; half lived till July the 1st, the other half died about the middle. This was only another proof to me that there is nothing gained by purchasing cheap plants, but much to be lost."

Tree Planting.—In planting trees this fall, all should remember that it is requisite to set the tree only just so deep as to enable it to stand, for we can earth to protect it from heaving off the winter's frosts; and as soon as spring opens and the ground is leveled down, the roots will start and seek their appropriate depth. If we dig a deep hole, especially in hard clay soil, and fill it with good loam and set our tree therein, we first invite the water there as into a cistern—and second, we cause a vigorous growth of roots, until they reach the undisturbed clay, when a check is at once perceptible; and often an orchard stands from five to seven years without apparently making any progress. Remember, then, and plant your trees just so deep as to cover their roots, but no more; then earth up for a winter protection against frost for the first year, and dress down again to a level in spring.

GRAPEVINES FROM GREEN WOOD.—A. M. Burns, of Riley County, Kansas, writes the *Prairie Farmer*, referring to rot, diseases, etc., in grape culture as follows:

"Although we have been free from rot and comparatively free from mildew—a few scattering bunches showing some last year on vines planted in the best prepared soil I have—yet I observed that quite a lot of yellow leaves made their appearance; these wan leaves, I noticed, were only on vines that had been propagated from green wood by layering, or on vines from old wood that had not been root-pruned before planting; while vines produced from good bearing canes, taken up in the fall and all the unripe wood cut off, "heeled in," and coming out in the spring with nicely calloused wood where cuts had been made, presented a very healthy-looking foliage. It is true that some of the hardy varieties produced roots from green wood, which I root-pruned within an inch or two of the collar, that have remained healthy-looking for years, but their progress in growth was very slow—very little more than good cuttings. The vines that I propagated by layering green wood, when not closely root-pruned before planting, nearly, if not all, died; while a great many propagated from sound canes, by layering, showed the yellow leaf and gradually died; but I observed that none of my vines exhibited the wan leaf which had been propagated from sound bearing canes, properly root-pruned and the wounds calloused before planting in properly prepared soil, adapted to the healthful growth of the vine."

Again, he adds an item which confirms additional our view of the necessity of cutting away unripe wood, or that which our good judgment tells us will not ripen, and thus aid in preparing the plant to endure the severity of a climate beyond its natural order. While this cutting may injure at the time, if made early, say 1st to 10th of October, a small portion of roots, experience has shown that there is benefit rather than injury in so doing. If the plant is left to itself, and severe weather attacks it in the unripe condition and with a quantity of unripe sap returning to the roots, the whole plant as well as the roots feels the effect injurious; hence the advantage of cutting away immature wood and foliage, that the remainder may return through its foliage and sap vessels only elaborated substances, healthy and hardy, in support of the vine. The following is Mr. Burns' item:

"It is an admitted fact, I believe, that the roots of the vines can not ripen their ends in autumn; the consequence is that the immature wood must rot if planted. It is also known that just in proportion to the quantity of the tops of grapevines that are cut off, there will be so much of the roots that will decay. Now to what other cause can I attribute the yellow leaves on vines brought from a distance, as well as those that are indigenous to the country, than that the decaying wood on the roots of the vines affects the vigor of the mature wood; perhaps sows the seeds of disease that may not be immediately observed, but which will, under favorable conditions, show itself at a future period. I have observed that the yellow leaves did not exhibit themselves, in some instances, for years after the vines were planted; but as soon as unfavorable conditions were presented, the yellow leaves could be seen."

THE DELAWARE GRAPE we have seen this year, grown on clay shale land well manured, ripen or rather color its fruit as early as the Hartford. On sandy and gravelly soils, while one or more berries have colored early, the main part of the bunch has not the matured any earlier than the Concord.

HARTFORD PROLIFIC GRAPE under our observation again this year, does better on clay than on sandy or gravelly soils. On clay soils its bunches are larger and more compact, and it colors and ripens earlier than when grown on sand.

AUTUMN PLANTING.—There is no doubt of the benefit of autumn planting for trees or vines, provided they are duly protected against the heaving frosts of winter. We have planted our cherries in September, and always with good results. Our pears and apples we prefer to plant never later than October, if we can possibly obtain them. The early planted tree, while the ground is yet warm, forms new fibrous roots, enabling it more successfully to resist the winter's changes, and to supply food as soon as wanted for the spring growth. If our trees are procured from a distance, and do not arrive in season to plant early, we make it a point to prepare our ground and have everything ready, so that when they do come, no time need be lost in planting them. Clay lands are better if worked in the fall when somewhat dry; at any rate they should not be plowed when wet, if it can be avoided, for once they get packed down hard in the fall, no benefit comes from winter's frosts, and often the spring gives no relief. If the ground for planting is level and somewhat stiff, with only a slight surface drainage, do not plant the tree too deep, but after planting go through with the plow and throw the earth up to the trees, leaving between each row an open furrow drain to hold and carry off the water during winter.

ORIGINAL DISSEMINATOR OF THE DELAWARE GRAPE.—A short time since we saw, in a Western paper, a record of a trip among vineyards; Dr. Grant was one of the party, and it was stated that he, Dr. Grant, was the original disseminator of the Delaware Grape. We believe in rendering "to Cæsar the things that are Cæsar's," but we can hardly believe Dr. Grant could have seen this record, or he would at once have refuted it, and given to Mr. A. Thompson, of Delaware, Ohio, the credit, justly his due, of bringing the Delaware prominently before the public as a distinct variety worthy of their patronage.

GLADIOLUS and other tender bulbs should be taken up before any frost affects the ground. It is perhaps best to take them from the ground as soon as the tops die, dry them carefully, not in too strong a sun, and pack them in tight paper bags and lay away in a dry place free from frost. In some sections where the ground is dry and snow falls, and remains, before the ground freezes, they will often do to be left in the ground, but as a rule they do not flower as freely as when taken up, kept during winter, and replanted. So also in our Southern States they undoubtedly will do to be left in the ground; but even there it is always well to transplant in order to have good blooms.

OUR ROSE BEDS.—From where we now write, the summer has been one of unusual drought; and having visited many gardens, we find the one where we are now staying with its roses giving daily an abundance of blooms, while many gardens kept in much higher condition have hardly a bloom to show, although in some their collections embrace dozens of varieties to our friend's one. The secret of this continual summer bloom, our friend says, consists simply in the fact that every rose bed should be re-set every year, and a bottom at depth of eight to twelve inches be supplied with fresh turf, or a foot deep of coarse barn-yard manure well chopped as it is put in. He prefers and only uses the turf sod.

PERKINS GRAPE.—This is a variety belonging strictly to the native fox grape; its bunches are large, and so of its berries, and it colors and ripens up early, and furnishes, according to the best information we can get, a large quantity of juice to the pound of grapes, which juice is rich in sugar, but a little too strong in aroma for a good wine, although one of our correspondents writes us that he regards it as among the most promising wine grapes recently introduced.

EARLY FRUIT-PLANTING.—The following, written by W. C. Flagg, Esq., Alton, Illinois, well known as one of the most intelligent fruit-growers at the West, and Secretary of the State Horticultural Society, we take from the *Prairie Farmer*, one of our most valuable Western exchanges, and truly a farmer's paper. This record has reference mainly to Madison and St. Clair counties, and is of great value to every thorough lover of fruit-growing:

"In the American bottom within the limits of Madison and St. Clair are found pear-trees of from seventy-five to perhaps a hundred and fifty years of age, planted by the French *habitans* in the good old times of French domination. Perhaps the first orchard planted by an American in the county of Madison was that set of seedling apple-trees by Samuel Judy, in section 5, of township 3, 8, about 1802 or 1803.

"It was a good many years later before grafted apple-trees were planted. A single tree of Lady Apples was planted in 1819, on the farm of D. A. Lanterman, in section 19, of 5, 8.

"The same year, or a little later, orchards of grafted fruit were set out by Robert Collet and Emanuel J. West, in township 5, 8. Among these trees were Lady Apple, Janet, and Bellefleur. The trees were procured from Burlington, New Jersey, at that time the home of William Coxe, whose work on the cultivation of fruit-trees appeared in 1817. Both of these farms having been leased to a long series of tenants, the orchard trees are now mostly dead.

"In 1822 Gersham Flagg planted an orchard of over five hundred trees in section 3, of 5, 8. Three hundred were seedling trees from St. Clair County, planted in the spring of that year, and two hundred were grafts from the nursery of John Smith, of Bond County, who started a nursery near Greenville in 1818, with stock brought from the nursery of George Heikes, an emigrant from Pennsylvania to Kentucky. Among these we find such varieties as Kirkbridge White, Rambo, Wine, Vandevere, Pennock, Pryor's Red, Newtown Pippin, Rawles' Janet, and Gilpin.

"Only a few years later a nursery was started in township 5, 8, by a Swiss of the name of Masson. His advertisement, and that of his partner, Robert Collet, may be found in the *Western Ploughboy*, an agricultural paper published at Edwardsville, in 1831. Among the forty varieties of apples advertised, are Pennsylvania Red Streak (Wine), Bellefleur, Newtown Pippin, Fall Pippin, Rawles' Janet, Small Romanite, Large Romanite, Rambo, Red Russet (Pryor's Red), Seek-no-Further, Hubbardstown Nonsuch, Porter Apple, Rhode Island Greening, Buckingham Vandevere, Lady or Pomme d'Appie. These were sold at twelve and half cents each, eleven dollars and fifty cents per hundred, and a hundred dollars per thousand. Fourteen varieties of pears are advertised, and a very desirable succession of peaches, extending 'from July 10th till 1st of November.'

"From 1830 onward, fruit culture and general horticulture increased rapidly. Evergreens from the Eastern States were planted about 1838 at Alton and elsewhere. In 1845 Dr. E. S. Hull planted his first peach orchard, whose remarkable fruit did much to attract attention to the Alton region.

"In 1843 vineyard culture was commenced by the Messrs. Koepfli, at Highland, in the southeast corner of the county, and wine was made by them in 1847, from the Catawba grape. Since that period the cultivation of grapes has been considerably extended in this vicinity.

"At Collinsville extensive plantations of the raspberry have been made in the last few years, under the bluff and on the 'American Bottom.' The product of one field sold in 1865 for $7,000.

"At Troy, Julius A. Barnesback has been very successful with a small orchard of an acre of dwarf pears, which he mulched with all the straw from forty acres of wheat. Under this apparently weighty covering

the trees have grown and borne fruit excellently well.

"Between Edwardsville and Troy there are numerous old orchards with whose history we are not familiar.

"Strawberry culture about Alton has increased considerably during the last few years, fifteen thousand pounds having been sent from Alton in a single day through the express offices, during the present season of 1867."

FALL OR AUTUMN FRUITING RASPBERRIES. — We have been not a little surprised at the statements made by some of the Western growers of the value of autumn-bearing raspberries. Our own experience has been rather to condemn than praise them; for even if a moderate crop is produced there is no demand for them—they are out of season, and not desirable—will not sell, and our children would rather have peaches or pears—in fact, do not care for the raspberries.

THE LOGAN GRAPE we have examined this season in connection with the Hartford Prolific, in clay and sandy gravelly soils, and while it colors a little sooner than the Hartford, it does not form as good bunches, nor does it really ripen any earlier, and in quality it is not equal, so that we believe it a variety to be cast aside.

THE LYMAN GRAPE.—It will be recollected that in our March number we copied a description of a grape under the above name, which had been issued by the secretary of the Ohio Pomological Society as a new grape, and that we then doubted it. Recently we find the following relative to it in the *Country Gentleman:*

"Among the new varieties of grapes, lately noticed in the horticultural journals, is one called the *Lyman*, found in the grounds of the late N. Longworth, of Cincinnati. I think this may prove to be an old variety, well known, and more generally cultivated in Vermont, for the last fifty years, than any other kind, until the introduction of new varieties of late. The fruit is of medium size, bunch and berry black, and the juice very dark, making a wine, with addition of sugar, resembling *port*. About fifteen to eighteen years ago, as nearly as I can recollect, Mr. Longworth applied to myself and others in this section, for samples of grapes in cultivation about here, and I sent him some Cowan grapes, Mr. J. Battey sent him some NcNiell grapes, and the late Rev. J. Wheeler, D.D., of Burlington, sent him the Lyman grape. Mr. Longworth tested all these varieties, and reported to each of us the weight of the must which he regarded as favorable, and he requested cuttings, which were sent to him. The facts stated above lead me to believe that the supposed new variety is the old Lyman grape of Vermont.

"JOHN W. BAILEY.

"PLATTSBURGH, N. Y., *July* 25."

WINDING THE BODIES OF FRUIT-TREES WITH STRAW.—Old things become new in horticulture as well as other pursuits, and recently we find writers touching up, and justly so, the policy of winding the bodies of fruit-trees with straw bands, or with moss wound on with a string, in order to protect it from the direct rays of the sun or the immediate direct injurious action of cold. We practiced it many years ago with good results, and can safely advise the course as one especially valuable to be pursued with recently planted cherries or pears, more particularly those with long bodies which will be exposed to the sun.

FOWLS will lay better and more regularly by being confined a part, say the morning, of each day.

TO NURSERYMEN.—We shall feel obliged if every nurseryman in the United States will send us a little account of his nursery—the amount of ground occupied—average number of fruit-trees, vines, etc., together with the soil, etc., etc.

ELWOOD, N. J., *August 19th*, '67.

MESSRS. G. E. & F. W. WOODWARD: I have noticed in your valuable JOURNAL letters giving this season's experience with strawberries, in which several varieties are rather severely "set down." I will omit names, etc., having no desire to hurt any one's feelings or question their facts, but merely to comment on the prevailing habit of praising or denouncing varieties without giving the reader any clue to whether the soil, the cultivator, or the variety should have the praise or blame. It is a matter of perfect indifference to the public whether Smith, Brown, and Jones succeed or fail with a certain variety. The object of publishing such statements should be to show, if possible, *why* they succeed or fail, that others may profit by their experience; and for this a knowledge of the nature of the soil, *at least*, is necessary. For instance, if one writer, who denounces the Jucunda, had told us that they were grown in a sandy soil, which is the case, if I remember aright, his statement would have had a certain amount of value; and if corroborated by a sufficient number of similar experiences, would show that it is not adapted to such a soil. Then we should have learned something. But if one merely pronounces a variety worthless, only to be contradicted point-blank by equally good authority, who will be any the wiser, though the war of *opinions* rage to the end of time? These same Jucundas had been "run" the previous year to produce plants, and, I think, his Agriculturists also.

We want a radical change in this matter. Why will not you, Messrs. W., lead off in this reform, by a standing notice, or otherwise, that a description of soil and other particulars should accompany every such statement of results to insure publication or notice? Give us a synopsis of the case with the verdict. I could also throw a little light on the statements of some others; but having said enough to explain my meaning, I will only remark that Metcalf's Early may or may not have "played out" this season. But the failure of two or two dozen growers with it will not justify that assertion. There are a good many things that *ought* to be "played out," however, and among them this evil of giving us facts instead of information.

Yours remorselessly,

C. E. F.

DISTANCE APART IN PLANTING.—All the old records give twenty-five to forty feet apart as proper distance at which to plant apple-trees. So, grape men say, plant 8+10, and 10+12 feet, etc. These distances are all probably correct when the tree or vine arrives at full maturity, but during the time intervening the ground has all to be worked; and as trees often bear more or less fruit many years before arriving at full size, we believe there is a gain in closer planting, and so believing we have practiced accordingly, setting our apple orchard 10+12 feet, our grapes 4+8, our dwarf pears 4+8, and so on with other trees, designing to take away the surplus, as those intended to be permanent require more space.

WOODBURY, CONN., *September 15th*, '67.

NOTES ON GRAPES IN THIS LOCALITY.—The unprecedented wet season has delayed the ripening of the grape crop full two weeks. Hartford, N. Muscadine, Delaware, and Israella, etc., are now ripening, while Concord, Diana, and Iona are just coloring.

Concord has lost full one half the fruit by rot. Delaware is ripening its fruit perfectly, notwithstanding the leaves mildewed badly.

Diana made a good growth until fruit was half grown, then the latter mildewed so as to leave not a single cluster healthy.

Iona and Israella have resisted the mildew reasonably well, and the fruit is free from disease. Allen's Hybrid and Ives have made a good growth, better than Adirondac, which has mildewed badly.

E. SPERRY

HYDRANGEA DEUTZIAFOLIA.—This variety was introduced from Japan by Dr. Hall, and placed in the hands of Messrs. Parsons & Co., of Flushing, L. I. Its vigorous habit, the season of its blooming, August and September, its magnificent trusses, changing from pure white to a most delicate tinge of pink, and the abundance of its bloom, render it one of the most desirable shrubs known.

CEDAR FALLS, IOWA, *September* 10, 1867.

MESSRS. EDITORS: There are doubtless some who feel interested in knowing how grapes will succeed in this latitude, 42½°, especially some of the new varieties. For the information of such I will send you a few notes.

My bearing vines consist of the following kinds: Diana, Delaware, Iona, Clinton, Creveling, Concord, Rogers' Hybrids Nos. 3 and 4, all of which are doing well, and especially Delaware and Rogers' Hybrids. Iona maintains its reputation as to quality, and from present appearances I think will be a good bearer. Rogers' No. 3 is a healthy, strong growing vine and an abundant bearer. The fruit is quite large and showy, of but medium quality. It is desirable, however, for its earliness. Among the new kinds that do not succeed with me are Israella, Allen's Hybrid, and Adirondac. Respectfully yours,

D. T. CHOAT.

PRESERVATION OF FLOWER STAKES.—Of all my experiments to preserve flower sticks against rot, the following is the only mode that has proved fully successful:

Heat ordinary coal tar to the boiling point; pour into a tub or barrel to a depth sufficient that the stakes may be covered four to six inches above the point of contact with the ground; put the lower ends of the stakes into the tar and allow them to remain at least one hour, then take them out; and after allowing the surplus tar to drain off, roll them in dry sharp sand until the tarred portion is completely covered; afterward allow them to dry thoroughly. Dip the stakes a second time in cold tar over the sanded portion, and let them get thoroughly dry again, and they are fit for use.

I treated a lot of stakes of different sizes in this manner over nine years ago: many of them have since been painted at two different periods with substantial paint, and now need repainting; still, the lower portion is as sound as ever, and will, no doubt, last for some years, although the sand has mostly disappeared.

W. F. HEINS, Paterson, N. J.

LIME, BONE-DUST, etc., are better to be applied to the orchard or the vineyard in autumn than spring. Let the application be made just before plowing up to the plants in the fall, when it will all be absorbed in the soil during winter, and be ready for the use of the trees and vines in spring. Dwarf pear orchards and vineyards may receive from twenty to fifty bushels of lime to the acre, and one ton of bone-dust, with, say, two bushels of plaster, and the result will be most satisfactory to the owner.

GAS LIME A PREVENTIVE OF CURCULIO.—One of our correspondents tells us that he has this year grown an abundance of the finest plums on trees that heretofore have always had their fruit stung by the curculio, and that while his trees have been loaded, his neighbors, only a few yards distant, have lost their entire crop. His practice for success is to have ready a heap of refuse gas lime, which every other day he manages by a cup on end of a stick or otherwise to scatter in, on, and among the foliage and branches of the trees while yet they are wet with the dew. The gas lime adhering to leaf, fruit, and branch seems to deter the insect from his labor of life, and leave the fruit crop to mature for the benefit of the land-owner.

FOREST NURSERY, FAIRVIEW, TODD CO., KY., *August* 16, '67.

MESSRS. EDITORS HORTICULTURIST:

Gentlemen—I can not regard your strictures, etc., on the Charles Downing Strawberry, and its originator, in the August number of the HORTICULTURIST, in any other light than that of unkindness. Why require that this berry shall be tested everywhere before sending out? Has this course been pursued toward any other strawberry? Is it expected that any variety of this fruit will succeed in all the *States* and *sections*? The variety (Charles Downing) has fruited six seasons in the hands of its originator; and two seasons in the hands of disinterested parties in other parts of the country. I think I have the right to expect the same courtesy exercised toward me that is shown to other patrons of your JOURNAL. When and where did you call on any other originator of fruit to have it tested everywhere before offering it for sale? But I will leave the subject for the present for your further consideration.

Very respectfully,

J. S. DOWNER.

[We confess a little suprise at the tone of Mr. Downer's communication above. We wrote our stricture, not against the strawberry, but as implicating with it the name of a horticulturist whose good works are known everywhere and whose bad traits have never been discovered, and as we do know that no strawberry yet generally known is free in all sections from faults, we felt that the name of Charles Downing should be used only *when* as connected with all that was desirable in fruit culture. We have but a few men in horticulture, if we must say it, as well as in other pursuits of life, who do not make the almighty dollar superior to their judgment and better feelings, and the names of those few we choose, so far as we can, to keep inviolate.

We know not what this strawberry may prove around the country. It may sustain the character of the name given it, and we shall rejoice if it does as much as any other one; but when the name of so valuable a man to the horticultural world is appended to a fruit, we think more care than usual should be given to testing its actual value everywhere. We have a private note from Mr. Downing in which he says he objected to the name until the kind had been more generally tested, and we believe every true horticulturist in the United States will join us in what we have said. You, Mr. Downer, have produced some good fruits; you had a right to give your own name to what you pleased, but the name of such a man as Charles Downing belongs to us all, and neither you or any other man has a right to attach it to any fancy of your own without the full and free consent of the owner.]

STRAWBERRIES that have been planted late should be covered as soon as the ground freezes, using either straw or cornstalks, or anything that will shield them from the freezing and thawing in winter, and yet not pack down upon and smother the plants.

BLACKBERRIES AND RASPBERRIES may be planted this fall just as successfully as in spring, and if put in during this month they will form new fibrous roots, and next year make far more vigorous growth than if the planting be left until spring. After they are planted, run the plow along and earth up to them, leaving a dead furrow between each row, to act as a drain for the water, and prevent the frost throwing the plants out. Covering the whole plant four or five inches will not hurt it, provided the drainage is kept open and the covering be removed as soon as the frost is out of the ground in spring.

CUTTINGS of grape, gooseberry, currant, etc., may be put in this month, in the open ground. Our experience has resulted in more uniform success from fall than spring-planted cuttings.

DRIED FRUITS.—Let no man hesitate to plant out small fruits, as raspberries, blackberries, etc., in quantity, simply because he is not near to a market where they can be sold from day to day as they are gathered. There is, perhaps, as much, and some say more, money to be had in growing and drying them as in growing and selling them fresh. The labor of marketing, use of horse, wagon, man, etc., etc., it is claimed by those who have tested the matter, fully balance any little extra price which the fruit may occasionally bring; and again, they say that if the fruit brings a high price sold in the market as fast as gathered, the supply is so limited, that when winter comes the dried fruit brings a correspondingly high price. The records show that as high as twelve cents a quart may be counted as the value of a crop of the Black Cap Raspberries when dried and sold at the average prices. Some seasons it runs above, even up to fifteen cents, but never below ten. There is always a demand for dried fruits, even exceeding the supply; and were they more readily obtained, would doubtless be still more called for, as their use is acknowledged by all to be healthful. There are many sections where land suitable for growing berries can be had at a cheap rate, and we are surprised that among the many enthusiastic and energetic labors of our fruit-growers, no large plantation and establishment for growing and drying berries has not been put in operation. It may appear a small business, but we really believe, rightly pursued, there is more money to be made by it according to capital required than in almost any other item of fruit-growing.

PROPAGATING PEARS FROM ROOTS.—I now propagate for myself and intimate friends the most choice varieties of pears, which I obtain by means of the roots. Not a single one fails in this new process. It is immaterial in what manner they are set out. This method I discovered accidentally, in consequence of some roots on which I intended to graft other kinds of pears being thrown on the ground and covered with a little earth, to preserve them until used for that purpose, and which were lost sight of and forgotten until the next spring, when all of them sent up stalks, which in the autumn were as tall as those raised from the seed of two years' growth. They can be set out in the spring as well as autumn. Such roots should be selected as have one or more terminal fibers, and those that are often cut off or left in the earth when a tree is transplanted, succeed well. They can not be too small, but should not be larger than the finger. The wounds at the large ends of the roots should be covered with the same composition to protect, as in grafting. They must be set obliquely.

DR. VAN MONS, of Belgium.

[We find the above going the rounds, and have been written to by a number of persons to know if they can grow their Duchesses, Seckels, etc., etc., by simply cutting off pieces of the roots and planting as above. We reply, that we have many years since grown pear-trees, cherry-trees, etc., from pieces of root, but that we should not advise the practice. Roots of a very strong vigorous seedling will sometimes send up good plants, but the average is less than of moderate growth, and the plants so grown with us all had a disposition to throw up suckers more readily than seedlings. As it is, those who purchase trees will almost always find them worked on seedlings, quince, etc., and hence the roots will be of the seedling. If a Bartlett or Duchess on quince has been planted so deep as to have the pear stock take root, it is possible a piece could be taken, and a tree of the same variety grown from it; but we do not think it could be as cheaply done as to bud or graft into a good healthy stock.]

THE application of salt to land assists in rendering soluble phosphate of lime and silicate of ammonia, hence one of its great items of value as a manure.

A GRAPE FOR THE MILLION, AND FOR ALL SECTIONS.—If such a thing can be produced, which we very much doubt, in our opinion the *vitis cordifolia* must become one of the parents. Hardihood of vine, freedom from diseases, etc., seem more to belong to it than any other, and those who are working for new results, we advise to experiment as much as possible with this species.

ROADSIDE IMPROVEMENTS.—Too often, as we have traveled over the country this summer, have we witnessed a fine house, good buildings, and fences, but the roadside outside of the fence line containing more or less rubbish, evidently the gatherings and prunings of the garden and lawn trees. Sometimes the street or roadway is clear of this; but while the grass is clipped inside the fence, the outside is left to grow long and rank, with more or less coarse weeds, presenting just that appearance to the man's grounds that the finding of a heap of dirt under the lounge would to the housewife, and giving him in our view no claim to a better name than would be applied to such a housewife.

Our horticultural readers should each and all strive to make the outward appearance of their grounds clean, neat, and tasteful, first by keeping away all rubbish from the street, next by frequent mowing and destruction of weeds, and lastly by planting and caring for shade trees and flowering shrubs, giving themselves pleasure and attracting notice from every passer-by; and again, as an example to those of their neighbors who, not being readers, or not having learned to move out of their original tracks, continue to make brush piles, keep hog pens, and grow thistles, mullein, etc., in front of their houses.

PEACHES.—As the season arrived, a greater crop of peaches was found on trees than counted for by a majority of growers. In some sections the curl in spring seemed to check and destroy, and many concluded their crop as entirely lost, but after a time the trees recovered; and although drought has been severe in some locations, yet even there the late ripening sorts have given good, fair average crops. The very early sorts have not been as profitable this season as later ones, owing partially to the curl and partially to rot, which affected the fruit at about the period of maturity. Oldmixon Freestone, Crawford's Late, and Smock have all proved very profitable. Where the trees had plenty of moisture and good soil, Crawford's Early has done well; but its tendency to overbear, and thus give a small-sized fruit, makes it objectionable to some of the largest growers. Some trees that we saw of the Sturtevant had the fruit evenly distributed over them, and of good size; the President also, as a white flesh peach, we saw in several places quite equal in productiveness and size to Oldmixon Free, and more showy.

MESSRS. EDITORS: I have a lawn on a sandy loam subsoil. This season it has burned out, and the grass has dried up, and the ground is filled with a coarse, wild, rank grass spreading a foot or more to each root. What shall I do with it?

B.

[Rake it over at once sharply with an iron rake, and remove as far as is possible all the wild grass, then apply bone meal ground fine at the rate of one ton to the acre, and salt at the rate of eight bushels to the acre, and plaster (gypsum) at the rate of two bushels to the acre; seed anew with red top and blue grass at the rate of four bushels to the acre; rake thoroughly, and roll several times, and especially after a rain. In spring we think your lawn will be all right again.

WIRES IN THE VINEYARD should be slackened as the weather grows cool. It should be done at the time of autumn pruning of the vines A little loosening now will save many a post from drawing and having to be re-set.

PEARS gathered when nearly ripe, and laid away in shallow drawers, one tier of fruit only, with flannel blankets below and above, will ripen in a few days, and color finely, developing their character and quality in the best manner.

THE PLUM CURCULIO.—P. S. Bush, Covington, Ky., sent a letter to the Cincinnati Horticultural Society stating how he destroyed the curculio and saved his plums. He covered the ground under the trees with gravel screened in lime, and secured his crop. Subsequently, in another experiment, he scraped off the grass under the plum-trees with a sharp hoe, and covered the ground half an inch thick with marble dust, which compacted down to one fourth of an inch, making an impervious coating, impenetrable to worms and insects. He had no trouble with the curculio. The theory is that the instinct of the insect teaches it to avoid depositing its eggs where it is plain the larvæ can not find cover to perfect itself. Hence it avoids trees where the surface of the ground beneath is hard and impervious.

[We are not a little surprised to see this item come again before a society so reputed for its intelligence as that of Cincinnati. It was an item of practice by Mr. Longworth years since, and the experiment made in many sections; but while it appeared to hold good in small yards and gardens where there were no neighboring trees, as soon as it was attempted on trees scattered about in a large orchard, it failed as often as it proved successful. But old things must be again brought up from time to time.

DAHLIAS should have the tops cut away as soon as one good hard frost has destroyed their foliage — then leave the tubers in the ground for a week or so. Select a good, clear, dry day for digging, drying, and taking them to the cellar or green-house. A good way to keep dahlias is to pack them with potatoes in barrels, standing the barrels in the cellar, so that they absorb little or no moisture from the bottom. Dahlias, however, keep well when simply placed on a dry cellar bottom, or on boards. Light is objectionable, as, like all roots, a certain amount of vitality is lost by exposure thereto. If possible, keep them in the dark.

SELECTING GRAPES TO PLANT.—*Messrs. Editors:* I am a novice in grape-growing; have about ten acres of land; have out about four acres in Catawba, one in Delaware, and about one more in varieties—Concord, Iona, etc. Now, I want to fill the balance of my ground with something reliable, and was going to plant Catawba, as that does well with us; but I see Mead's book condemns it, so also Bateham, of the Lake Shore Grape-Growers' Association, and I am measurably in the dark as to what to plant. Can you enlighten me?

AVON, Ohio.

[We know not whether we can advise satisfactorily as to what grape to plant, or whether we can enlighten Avon; but perhaps he will get some light if he will compare Mead's book carefully with Dr. Grant's treatises, and note the fact that Mead speaks favorably of no grape except those in which Dr. Grant has a leading interest. Again, if he will trace the course of Mr. Bateham, he will find that, since his leaving the nursery business, he has advocated the Iona and others of Dr. Grant's grapes to the exclusion of all others, while in the section where he resides, the Iona has fruited but very little, and therefore he can not know much of it. Aside from Catawba, we should now plant largely Rogers' 15, Ives' Seedling, and Norton's Virginia, looking to the wine products for our returns. All these varieties, it is known, succeed well in both vine and fruit in the region from which you date, and they are all wine grapes. Salem, a new grape of Rogers', may be superior, but it wants testing, therefore buy a dozen or so of it and try it.]

HYACINTHS, TULIPS, AND OTHER BULBS should be planted during this month. Make the soil deep and rich with well-rotted manure, but when setting the bulbs place around them clean sand. One of the best shows of flowering bulbs we ever saw was on the premises of a florist who made his ground rich and deep to within three inches of what would be the level surface. He then spread an inch of clean white sand; then placed his bulbs and covered them with sand; then one inch of soil, and a covering of thoroughly rotted manure.

To have a continuance of flowering in spring, the bulbs should be planted at different times in the fall; say, part the 10th of October, part the 20th, and part 1st of November.

HARDY SHRUBS.—It is better to plant out in the fall than in spring. Fall-planted shrubs will often give many flowers the following summer, and make more vigorous growth than those planted in spring.

CLEAN THE GROUND of all weeds or rubbish this fall. A few weeds or a little bunch of grass serves as a nesting-place for mice, and before you are aware of it your trees are girdled. Besides, there is nothing like cleaning up in the fall, as it is comparatively a leisure time. In spring there is everything to do, and you can't stop. Clean up now, and all the ground for next year's cropping plow or dig, and leave loose for the winter's frosts to act upon.

AN IMMENSE SEED ESTABLISHMENT.—We have now in this country a number of very large seed establishments, most of which are found recorded in our advertising columns, and the following account, taken from the *Country Gentleman*, of one at Rochester, owned and conducted by James Vick, Esq., will enable those who have not an opportunity of visiting, to appreciate somewhat of their magnitude:

"He now occupies, in the southeast part of the city, twenty-three acres of ground for growing seeds, chiefly flower seeds, and employs six horses and about twenty-five men and women. The collection of bulbs on these grounds is large—over a hundred thousand tulips flowered the past season; and the collection of lilies is probably the best in the country. During the blooming season the display of these and other flowers presented a brilliant and magnificent appearance. More than fifty persons are employed in the seed-rooms in the city during the business season, in packing seeds and filling orders. Two persons are constantly employed in opening letters, often working from fifteen to eighteen hours a day, more than a thousand orders frequently being received in a day. The postmaster states that on some days last season these letters constituted one eighth of all that came to Rochester. From seven hundred to a thousand orders are generally filled each day—making over seventy thousand last year, addressed to forty-five thousand different customers. Eleven thousand dollars were paid for postage the past year."

ACKNOWLEDGMENT. — Our thanks are due to F. P. Vergon, of Delaware, Ohio, for a box of Delaware grapes, ripe and fine, and received in good condition *September 10th*. Also to E. J. Keeley, Esq., Paramus, N. J., for fine specimens of Concord and Delaware grapes.

BY reference to a notice in our advertising columns, it will be seen that the firm of G. E. & F. W. Woodward is dissolved by mutual consent. F. W. Woodward, who has had the charge of the editorial and publishing department of the HORTICULTURIST, will continue the same, as well as the publication of Agricultural and Horticultural books, and the business of the late firm, at 37 Park Row.

G. E. Woodward will practice his profession as Architect and Civil Engineer, and will publish the Architectural books of the late firm at 191 Broadway, N. York